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AUTHOR Campbell, Deborah  
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## ABSTRACT

The PictureAustralia service is a collaboration between cultural agencies to bring their digital pictorial collections together at the one web site, hosted by the National Library of Australia. It was developed through the identification of a need for a national image discovery service. The key to the service is its cross-sectoral nature, including the collections of libraries, museums, archives, galleries, universities, historical societies and other cultural agencies. The service operates through the use of a central metadata repository to support national discovery and to ensure consistency in searching and locating images. The participating agencies place descriptive metadata for their digital images, in the simple unqualified Dublin Core format, in a directory that can be accessed by the National Library of Australia's gathering software. This descriptive information includes the URLs for location of the associated digital images. Every two months this data is gathered into a central Oracle database and is indexed for searching. Thumbnail images are hosted on the participant sites and are pulled into the results sets in real time. Users click on a thumbnail image and are directed to the relevant member web site to view the original. From here they may remain on the member web site to search just that collection or to order a high quality copy of that image, or they may return to the PictureAustralia site to continue with their broader searching. This paper discusses the development of a prototype; the original participants; demonstration at the "Information Online and On Disc 99"; the launch of PictureAustralia; collaborative developments; the State Library of New South Wales as a participant in PictureAustralia; and evaluation and success of PictureAustralia. (AEF)



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### PictureAustralia – participating in a collaborative digital project

[www.pictureaustralia.org](http://www.pictureaustralia.org)

**Deborah Campbell**  
National Library of Australia  
Canberra, Australia

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### What is PictureAustralia?

The PictureAustralia service is a collaboration between cultural agencies to bring their digital pictorial collections together at the one web site, hosted by the National Library of Australia.<sup>1</sup> It was developed through the identification of a need for a national image discovery service, as users do not make distinctions about which types of agencies hold the images they require. The key to the service is its cross-sectoral nature, including the collections of libraries, museums, archives, galleries, universities, historical societies and other cultural agencies.

The service operates through the use of a central metadata repository to support national discovery and to ensure consistency in searching and locating images. The participating agencies place descriptive metadata for their digital images, in the simple unqualified Dublin Core format,<sup>2</sup> in a directory that can be accessed by the National Library of Australia's gathering software. This descriptive information includes the URLs for location of the associated digital images. Every two months this data is gathered into a central Oracle database and is indexed for searching. Thumbnail images are hosted on the participant sites and are pulled into the results sets in real time. Users click on a thumbnail image and are directed to the relevant member web site to view the original. From here they may remain on the member web site to search just that collection or to order a high quality copy of that image, or they may return to the PictureAustralia site to continue with their broader searching.

<sup>1</sup> National Library of Australia – <http://www.nla.gov.au/>

<sup>2</sup> Dublin Core Metadata Element Set, Version 1.1 – <http://au.dublincore.org/documents/dces/>

## Phase I - development of a prototype

### Getting started

In 1998, Australian libraries had a strong tradition of cooperation and an infrastructure for national resource sharing. However, environmental changes, particularly Internet developments, were creating new opportunities and the National Library was keen to broaden its collaboration to take full advantage of these developments.

The ImageSearch project, the proof-of-concept for the PictureAustralia service, began as an initiative to test the application of international standards for image presentation, digitisation and metadata in Australia. In mid 1998, Warwick Cathro and Maxine Brodie, the Directors of Information Technology Services at the National Library and the State Library of New South Wales respectively, came up with the idea of coordinating access to the pictorial collections of both institutions with a Web-based service. This idea quickly expanded to include integrated access to the pictorial collections of the state libraries and national cultural institutions.

Maxine Brodie, as Convenor of *Information Online & On Disc 99*, suggested a proof-of-concept be showcased at this conference in January 1999.<sup>3</sup> It was agreed that the fastest and most useful way to proceed would be to implement a digital images metadata repository at the National Library, based on the free MetaWeb software of the Distributed Systems Technology Centre (DSTC),<sup>4</sup> which would permit further exploration of the functional issues after the cessation of the conference.

The plan was for a range of participating agencies to provide a set of URLs for a selection of digital images and associated metadata. The metadata would then be gathered into a repository by gathering or harvesting software and indexed for subsequent searching.

### The original participants

Work was started in earnest in November 1998 with the downloading of the MetaWeb software to underpin the pilot. It became increasingly clear that there would be value in extending beyond the boundary of library-based image search services, to foster closer collaboration with cultural institutions facing the same issues in providing enhanced Web-based access to their pictorial collections. Agencies with a significant quantity of Dublin Core metadata or significant quantities of digitised images were asked to participate. These included the State Libraries of Tasmania and Victoria and the Australian War Memorial, in addition to the National Library and the State Library of New South Wales.

Each institution was required to provide Dublin Core compliant metadata describing selected themes of images, including regional Australian towns, whaling ships, wildflowers, and the Antarctic. These themes reflected the digitised collection strengths at the time. An upper limit of 5,000 images per institution was set to ensure appropriate response times and minimal impact on the National Library's information server. A metadata conversion program to convert MARC records to Dublin Core was developed for those agencies requiring assistance in conversion.

### *Information Online & On Disc 99*

The participating agencies met a number of times and continued collaboration via email, with facilitation from the Project Coordinator based at the National Library. A proof-of-concept was completed in time for demonstration at the *Information Online and On Disc 99* conference and proved to be an extremely successful venture. Around 11,000 images from the five institutions were incorporated into the project and feedback on all aspects of the demonstrator was gathered via a survey of users.

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<sup>3</sup> Information Online & On Disc 99 – <http://www.csu.edu.au/special/online99/>

<sup>4</sup> Distributed Systems Technology Centre – <http://www.dstc.edu.au/>

Suggestions that came out of the conference included adding all of the digitised collections from each participating institution and extending the concept to encompass under-utilised or under-exposed collections wherever they might be located in cultural institutions, such as architectural slides of university fine arts streams, university archives, or small photographic collections in public libraries.

The ease with which the proof-of-concept was established and made operational provided encouragement with respect to the further development of the project.

There were some issues identified in the proof-of-concept requiring further investigation including:

- developing additional partnerships;
- access to a national pictorial thesaurus;
- a uniform ordering capability;
- copyright management;
- need for improved navigation;
- relevance ranking across varying metadata;
- quality, quantity and consistency of metadata;
- HTML quality – double quotes in content could not be harvested;
- participant branding to ensure users could identify whose collection they were accessing;
- collection compared to item level description; and
- embedded compared to separate metadata.

#### Moving forward in 1999

Following the *Information Online On Disc 99* conference, the participating agencies met to consider how to develop the proof-of-concept. It was clear that the MetaWeb software would not be scalable for metadata describing all of the pictorial collections. The participants agreed to await the outcomes of the National Library's Digital Services Project, which included a search for a Metadata Repository and Search System (MRSS) that could potentially support the project.

The search for a Metadata Repository and Search System resulted in the purchase of the MetaStar suite by Blue Angel Technologies (BAT).<sup>5</sup> Advice from Information Technology Services indicated that the proposed PictureAustralia service could be supported on this platform. This approach aligned with the strategic directions of the National Library to collaborate with other cultural institutions and to enhance access to national collections, and led to the development of a business case aimed at partial cost recovery. The strategy was to facilitate achievement of the project's service objective across a range of large and small organisations, while at the same time providing some capacity for the development of enhancements in the medium term.

#### Phase II - the launch of PictureAustralia

At the conclusion of a second annual participant's meeting in January 2000, the National Library had a scalable software platform, an agreed business model to support the development of the pilot into a fully-fledged service and a timeline to complete the service by the middle of the year. Formal letters were sent to the participating agencies inviting them to move into Phase II of participation and a Service Level Agreement with each agency was also developed.

The participants agreed to supply all of their metadata to extend the coverage of the service. They also decided to supply thumbnail images for inclusion in the search results to increase the visual nature of the service. Harvesting of this data was undertaken in the first quarter of the year and agencies undertook fine-tuning of metadata where required. The site was fully operational from June 2000 but not publicised. This allowed the developers three months to test the site before the product launch.

During this period, the National Library had been discussing participation in the service with a range of other agencies, some of which it had targeted because of their collection of strengths and some of

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<sup>5</sup> Blue Angel Technologies – <http://www.blueangeltech.com/>

which had heard about the service and approached the Library. The National Archives of Australia was targeted because of the significance of its collection and was able to conduct a technical trial and join the service in time for the launch.

Following on from the well-publicised launch on 4 September 2000,<sup>6</sup> the service won a coveted Australian Financial Review Internet award in the Arts category. The judges commented “it is an excellent portal for Australian cultural material of a pictorial nature, seamlessly integrates multiple multimedia databases into an elegant visual experience for the customer, and the use of metadata is excellent.” This award and increasing usage – an average 40,000 visits per month in 2002 from users all over Australia and overseas (an increase of around 30% on monthly visits in 2001), indicates the ongoing success of the service in meeting the needs of a wide group of users.

### **Continuing the collaboration**

The serendipitous approach to increasing the content coverage and participation in the service continued after the launch of PictureAustralia, with a large number of agencies, representing the cultural sector at the national, state and local level, contacting the Library for information about joining. Some agencies were in a position to join directly, and in 2001 the Australian Heritage Commission, Nolan Gallery, Lake Macquarie City Library, Museum Victoria, National Library of New Zealand and Campbelltown City Library (in collaboration with the Campbelltown and Airds Historical Society) all joined the service.

The National Library of New Zealand was the first overseas agency to join, with content relating to Australia, followed by the Scottish service SCRAN.<sup>7</sup> These developments revealed the mutual value of the collaboration, with a new user group targeted for the National Library of New Zealand and SCRAN collections and Australian users having access to content that they may not have even been aware of.

Other collaborative developments included discussions with the National Library of Canada regarding the possibility of establishing a similar model for Canadian cultural agencies. This culminated in the launch of Images Canada<sup>8</sup> in May 2001, a pictorial discovery service based closely on the PictureAustralia model and including the collections of eight Canadian agencies to date. The National Library of New Zealand is also investigating the possibility of establishing a PictureAotearoa service.

A large number of agencies approached PictureAustralia for advice on digitisation of images and creation of metadata. This led to the development of a booklet, *A Guide to the PictureAustralia Service*,<sup>9</sup> which provides information on the standards underpinning the service for agencies wishing to develop in a compatible manner.

The number of smaller agencies approaching PictureAustralia with the intention of joining in the medium term led to a reassessment of the business case at the third annual participant’s meeting in January 2001. The new model, supported by all the participants, included a sliding scale arrangement based on agency scope and responsibility, for example a national, state or regional focus, with respect to the membership fee. The new business case also made allowances for consortia proposals.

The National Gallery of Australia, the Australian Capital Territory (ACT) Heritage Library, the Northern Territory Library and Information Service and the Vision Australia Foundation all joined PictureAustralia in 2002, making a total of around 600,000 images from 18 member agencies accessible to users through the one interface.

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<sup>6</sup> NLA News, November 2000 – <http://www.nla.gov.au/pub/nlanews/november00/picturaustralia.html>

<sup>7</sup> SCRAN – <http://www.scran.ac.uk/>

<sup>8</sup> Images Canada – <http://www.imagescanada.ca/>

<sup>9</sup> A Guide to the PictureAustralia Service – <http://www.pictureaustralia.org/guide.html>

The State Library of New South Wales,<sup>10</sup> a key original member of the service and contributor of the greatest number of images, is an interesting agency to consider from the perspective of a participant in PictureAustralia.

### **The State Library of New South Wales as a participant in PictureAustralia**

#### **Pictorial collections and digital activities**

The State Library of New South Wales has picture collections in both its Mitchell Library and Sir William Dixson Library and the Dixson Galleries form one of the most significant historical and documentary collections in Australia. The entire collection comprises around 1 million images. Comprising media as diverse as watercolours, prints, drawings, silhouettes, miniatures, framed works (including oil paintings), architectural plans, black & white drawings, around 750,000 photographs and realia, the collections aim to document the lives of Australians, their society and their buildings and landscapes. While the collection focus is New South Wales, there are strong nineteenth century holdings of other Australian states and the Pacific Region.

PICMAN<sup>11</sup> is the State Library of New South Wales' database of pictures and manuscripts, recording material processed in the last ten years. At present, there are 586,918 records in PICMAN, 306,000 with attached images. Of these, 266,000 are contributed to PictureAustralia (some images were suppressed for copyright reasons). The bulk of the images the State Library contributes to PictureAustralia are derived from videodiscs created in the 1980s. These discs describe large photographic negative collections and the quality is poor but sufficient for reference purposes. The State Library is slowly upgrading the quality of the most significant components of these archives.

In addition, the State Library began a new program in 2001 to digitise images of recent acquisitions, exhibition items, significant items or collections and images on frequently searched topics – derived from PICMAN and PictureAustralia search logs. Approximately 10,000 new images will be added per year over the next three years to PICMAN and PictureAustralia.

#### **Participation in PictureAustralia**

PictureAustralia provides a unique and effective service, and clearly benefits a wide-ranging research community. It works in conjunction with the PICMAN database drawing a wider user group than the State Library can reach, particularly as a result of its promotions budget and promotional activities.

In the last year, referrals from PictureAustralia, in the form of page views of State Library images from PICMAN, constituted an average of 32% of the total requests for page views by all users. This is a significant figure particularly as it is continually increasing – rising from 24% in July 2001 to 36% in June 2002. Clearly, the State Library of New South Wales' participation in PictureAustralia is bringing more users to the State Library's site. Total requests for pages in PICMAN rose by 54% in the same period. Being involved in PictureAustralia does not appear to have had an impact on photographic orders however, which the establishment of a uniform ordering capability may address.

Participating in PictureAustralia is comparatively simple – operational staff are not even aware of the harvesting routines and there appears to be little substantial impact on other aspects of operations. A program, written by the PICMAN vendor, automatically harvests Dublin Core metadata from PICMAN records and deposits them in a directory from where they are regularly copied into PictureAustralia. However, database modifications and development must always take into account PictureAustralia functionality and the impact that any changes might have on it.

Searches on member agencies' own databases can be more powerful and accurate than searching PictureAustralia where agencies have additional data in their own system that they do not contribute to PictureAustralia. For example, the State Library of New South Wales has an extensive notes field,

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<sup>10</sup> State Library of New South Wales – <http://www.sl.nsw.gov.au/>

<sup>11</sup> PICMAN – <http://www.sl.nsw.gov.au/picman/>



which was not provided with PictureAustralia records because of the general entry length. Not being able to free text search on this field in PictureAustralia can have an impact on search success. However, this is to some extent addressed by the number of referrals from PictureAustralia to local databases and also by the comprehensiveness of a PictureAustralia search, which looks across a wide range of databases.

Inconsistent mapping of metadata from the various participants reveals a broader issue of the lack of standardisation in the description of pictorial material in Australia, which has an impact on the effectiveness of resource discovery platforms such as PictureAustralia. The development of best practice guidelines for the creation of metadata for the service, based on the *Guidelines for the Creation of Content for Resource Discovery Metadata*<sup>12</sup> developed by the National Library of Australia and the State Library of Tasmania in consultation with cultural sector stakeholders, is a strategy to minimise the impact of this issue over time. The promotion of the Australian Pictorial Thesaurus<sup>13</sup> as the preferred thesaurus for the service is also contributing to standardisation at the subject heading level.

### **The way forward**

PictureAustralia is always developing as a service. A full evaluation was undertaken in June 2001, through statistical analysis, usability testing via scenarios with users and a user satisfaction survey. Areas for enhancement were identified and these have been addressed over the past months. A new interface has been released giving users access to the search function from every page and incorporating simpler searching. Users can also increase the number of results displayed per page by using the advanced search option. A new ordering page has been included to provide a quick reference point for the image ordering requirements of all the member agencies. The picture trails section which brings together highlights from the collections on specific topics, has been updated to allow for continued expansion of this value-adding feature. In addition, in the next six months PictureAustralia will move onto a new software platform, TeraText,<sup>14</sup> which will provide increased scalability and search flexibility for the service as it expands.

The National Library continues to target potential new collections that will strengthen the service and is always alert for strategic opportunities. Discussions and technical trials continue with a range of agencies. The number of members, images and users accessing the service are all expected to continue to expand over time.

The success of PictureAustralia thus far may be attributable to a number of factors. It is based on an infrastructure that is simple and not overly demanding in participation requirements. The National Library and the participants saw Internet developments removing the boundaries between the different cultural sectors and the cross-sectoral approach to this initiative has been fully supported by users. The commitment and collaborative attitude of the participating agencies cannot be overestimated. In addition, these agencies choose their own digitisation priorities, and so the ability to re-purpose digitised images has also become a key success factor in the development of the service. Challenges will continue to arise as the service expands but as the participating agencies bring their range of experience together, the strength of the collaborative approach is likely to ensure continued success.

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<sup>12</sup> Guidelines for creating metadata content – <http://www.pictureaustralia.org/metadata.html#guidelines>

<sup>13</sup> Australian Pictorial Thesaurus – <http://www.picturethesaurus.gov.au/>

<sup>14</sup> TeraText – <http://www.teratext.com/>



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